IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Nicholas Ian SAUNDERS et al.

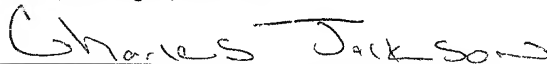U.S. Serial No.:   Filed Concurrently Herewith

Title of Invention: SIGNAL PROCESSING

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                                           New York, NY 10151
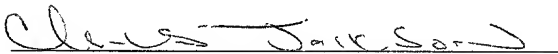
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PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Box Patent Application (35 U.S.C. 111)
Washington, D.C. 20231

Sir:

Before the issuance of the first Office Action, please amend the above-identified

application as follows:

IN THE CLAIMS:

Please amend claims 5-11, 14-16 and 19 as follows:

5.   (Amended) A system according to claim 3, wherein the compressed bitstreams comprise

groups of intra frames and predicted frames, and if $|(V2-V1)|$ is greater than a first $(V2-V1)$

threshold, then the target bit rate is reduced by a small amount, and preserved transcoding parameters are reused on intra frames and at least some predicted frames.

6.   (Amended) A system according to claim 4, wherein the groups of frames include I, P and B frames and I and P frames are recoded with reuse of the preserved parameters, and B frames are recoded without reusing preserved parameters

7.   (Amended) A system according to claim 4, wherein if V_2 is less than a second threshold value Th2 , which is less than the said first threshold Th1 then the target bit rate is reduced by a medium amount, and preserved transcoding parameters are reused on intra frames but not on predicted frames.

8.   (Amended) A system according to claim 4, wherein if $|(V2-V1)|$ is greater than a second (V_2-V_1) threshold but less than a third (V_2-V_1) threshold then the target bit rate is reduced by a medium amount, and preserved transcoding parameters are reused on intra frames but not on predicted frames.

9.   (Amended) A system according to claim 4, wherein if V_2 is less than a third threshold value Th3 , which is less than the said second threshold Th2, then the target bit rate is reduced by a large amount, and preserved transcoding parameters are not reused on any frames.

10.   (Amended) A system according to claim 4, wherein if $|(V\_2-V\_1)|$ is greater than said third $(V2-V1)$ threshold then the target bit rate is reduced by a large amount, and preserved transcoding parameters are not reused on any frames.

11.   (Amended) A system according to claim 1, wherein stuffing bits are added to the bitstream if V_2 is tending towards overflow of the downstream buffer and/or V_2 differs from V_1 tending towards overflow.

14. (Amended) A system according to claim 12, wherein the said signal processor comprises one or more of: a store for storing the bitstream; and a communications channel for transferring the bitstream from the decoder to the encoder.

15. (Amended) A system according to claim 12, wherein the said signal processor comprises an editing apparatus.

16. (Amended) A system according to claim 1, wherein the said signal processor comprises an intra-frame encoder to produce an intra frame bitstream, an intra frame signal processor and a decoder for decoding the processed intra frame bitstream to produce the said processed decompressed bitstream.

19. (Amended) A computer program product arranged to carry out the method of claim 17, when run on a programmable digital signal processing system.

Please add new claims 20-23 as follows:

20. (New) A system according to claim 1, wherein the said signal processor comprises one or more of: a store for storing the bitstream; and a communications channel for transferring the bitstream from the decoder to the encoder.

21. (New) A system according to claim 1, wherein the said signal processor comprises an editing apparatus.

22. (New) A system according to claim 12, wherein the said signal processor comprises an intra-frame encoder to produce an intra frame bitstream, an intra frame signal processor and a decoder for decoding the processed intra frame bitstream to produce the said processed decompressed bitstream.

23. (New) A computer program product arranged to carry out the method of claim 18, when run on a programmable digital signal processing system.
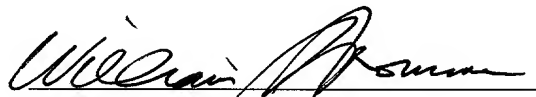
REMARKS

Claims 1-23 remain in the application. Claims 5-11, 14-16 and 19 have been amended to eliminate multiple dependencies. New claims 20-23 have been added. Attached hereto is a marked up version of the changes made to claims 5-11, 14-16 and 19 by the current amendment. The attached page is captioned **"Version with markings to show changes made."** The filing fee has been calculated based upon these amendments to the claims.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims:

5.   (Amended) A system according to claim 3 or 4, wherein the compressed bitstreams comprise groups of intra frames and predicted frames, and if $|(V2-V1)|$ is greater than a first (V2-V1) threshold, then the target bit rate is reduced by a small amount, and preserved transcoding parameters are reused on intra frames and at least some predicted frames.

6.   (Amended) A system according to claim 4 or 5, wherein the groups of frames include I, P and B frames and I and P frames are recoded with reuse of the preserved parameters, and B frames are recoded without reusing preserved parameters

7.   (Amended) A system according to claim 4, 5 or 6, wherein if V_2 is less than a second threshold value Th2 , which is less than the said first threshold Th1 then the target bit rate is reduced by a medium amount, and preserved transcoding parameters are reused on intra frames but not on predicted frames.

8.   (Amended) A system according to claim 4, 5 6 or 7, wherein if $|(V2-V1)|$ is greater than a second (V_2-V_1) threshold but less than a third (V_2-V_1) threshold then the target bit rate is reduced by a medium amount, and preserved transcoding parameters are reused on intra frames but not on predicted frames.

9.   (Amended) A system according to claim 4, 5, 6, 7 or 8 wherein if V_2 is less than a third threshold value Th3 , which is less than the said second threshold Th2, then the target bit rate is reduced by a large amount, and preserved transcoding parameters are not reused on any frames.

10.   (Amended) A system according to claim 4, 5, 6, 7, 8 or 9, wherein if $|(V\_2-V\_1)|$ is greater than said third (V2-V1) threshold then the target bit rate is reduced by a large amount, and preserved transcoding parameters are not reused on any frames.

11.   (Amended) A system according to claim 1 any one of claims 1 to 10, wherein stuffing bits are added to the bitstream if V_2 is tending towards overflow of the downstream buffer and/or V_2 differs from V_1 tending towards overflow.

14.   (Amended) A system according to claim 12 any preceding claim, wherein the said signal processor comprises one or more of: a store for storing the bitstream; and a communications channel for transferring the bitstream from the decoder to the encoder.

15.   (Amended) A system according to claim 12 any preceding claim, wherein the said signal processor comprises an editing apparatus.

16.   (Amended) A system according to claim 1 any one of claims 1 to 13, wherein the said signal processor comprises an intra-frame encoder to produce an intra frame bitstream, an intra frame signal processor and a decoder for decoding the processed intra frame bitstream to produce the said processed decompressed bitstream.

19.   (Amended) A computer program product arranged to carry out the method of claim 17, 18 and/or 20 when run on a programmable digital signal processing system.